(d) a throttling surface consisting of a small and adjustable gap along a constant distance of considerable length creating a linear pressure drop with increasing flow velocity.

(e) a fluid passage way and internal cavity free of sharp corners, cracks, or crevasses.

(f) a valve assembly of wetted components of constant material type.

(g) a valve assembly of plastic where the required metallic components are isolated at safe distances of barrier plastic to minimize ionic migration from the process fluid to said metallic components.

2. A free draining plastic throttling valve of double diaphragm construction for the safe containment of hazardous and toxic process fluids comprising.

(a) the features enumerated in **claim1**.

(b) a weep hole and passage way to detect a break or leak of the primary diaphragm without the need for disassembling the valve.

3. An integral throttling surface and primary diaphragm comprising.

(a) tapered sides and a flat fluid discharge matching the contour of the body discharge area whose gap is controlled by the positioning of the diaphragm causing the fluid pressure drop to be a linear relationship to the flow through the gap.

(b) an integral threaded stem for capturing the backup diaphragm on the non wetted side of the primary diaphragm.

(c) an integral threaded stem for capturing the backup diaphragm on the non wetted side of the primary diaphragm directly to a threaded drive shaft for positioning said diaphragms for the regulation of the fluid flow rate.

(d) an integral rectangular cross section rim machined at the periphery of the diaphragms for the purpose of providing a fluid seal without the need for o-rings or new wetted materials.

(e) a construction of tandem diaphragms such that one backs up the other and both maybe positioned synchronously by an attached threaded drive shart

4. a construction of tandem diaphragms that include a weep hole bored into the space in between the two diaphragms providing for the detection of a leak in the primary diaphragm.

5. A drive shaft providing direct coupling from a rotor to the positioning of the diaphragms comprising.

(a) corrosion resistant material.

(b) flat sections machined on either side to prevent the unwanted rotation of the drive shaft relative to the captured diaphragms.

(c) a construction of tandem diaphragms and metallic drive shaft for positioning said diaphragms relative to a mating surface.

6. A screw drive mechanism for translating rotational to linear motion using a large diameter rotor for carrying comparatively large axial loads comprising